

WHAT IS CLAIMED IS:

1. A neurocomputer comprising:
 - a plurality of n processing elements;
 - a plurality of connectors operably coupled with said elements;
 - 5 a conductive medium operably coupled with said connectors; and
 - a forcing apparatus operably coupled with said medium.
2. The neurocomputer of claim 1, wherein:
 - said plurality of connectors comprises no more than n connectors,
 - each of
 - 10 said connectors being operably coupled with a corresponding one of said elements.
3. The neurocomputer of claim 1, wherein:
 - said forcing apparatus comprises a rhythmic input.
4. The neurocomputer of claim 1, wherein:
 - said elements comprise oscillators.
- 15 5. A neurocomputer comprising:
 - a plurality of n oscillating processing elements;
 - a plurality of no more than n connectors, each of said connectors
 - being operably coupled with a corresponding one of said elements;
 - a conductive medium operably coupled with said connectors; and
 - 20 a rhythmic input operably coupled with said medium.
- Sub a 6. A neurocomputer comprising:
 - a plurality of n processing element means;
 - a plurality of connectors operably coupled with said element

means;

means for simultaneously applying an oscillatory signal to each of
said element means via said connectors; and

means for generating said oscillatory signal operably coupled with
said means for applying.

5 7. The neurocomputer of claim 6, wherein:

 said plurality of connectors comprises n connectors, each of said
connectors being operably coupled with a corresponding one of said element means.

 8. The neurocomputer of claim 6, wherein:

 said element means comprise oscillators.

10 9. The neurocomputer of claim 6, wherein:

 said means for applying comprises a conductive medium.

 10. The neurocomputer of claim 6, wherein:

 said means for generating comprises a rhythmic input.

 11. An oscillatory neurocomputer comprising:

15 a number n of oscillating elements

 a source of a rhythmic forcing input,

 a medium interconnecting the source of rhythmic forcing input to
each

oscillating element,

20 each oscillating element having an oscillating frequency,

 the oscillating frequency f_1 of at least one of the oscillating
elements differing from the oscillating frequency f_2 of at least one other of the oscillating
elements,

the source of a rhythmic forcing input producing an input of a third frequency f_3 , establishing communication between the at least one oscillating element and the at least one other oscillating element.

12. An oscillatory neurocomputer according to claim 11, wherein f_3 is substantially the difference between f_1 and f_2 .

13. An oscillatory neurocomputer according to claim 11, further comprising a number n_1 of connections of the source of a rhythmic forcing input to the oscillating elements, wherein

$$n_1 \leq n.$$

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14. An oscillatory neurocomputer according to claim 12, further comprising a number n_1 of connections of the source of a rhythmic forcing input to the oscillating elements, wherein

$$n_1 \leq n$$

15. An oscillatory neurocomputer according to claim 11, wherein the oscillating elements are electronic oscillators, the source of a rhythmic forcing input is a function generator and the interconnecting medium is an electrically conductive medium electrically connecting the source of a rhythmic forcing input to the oscillators.

16. An oscillatory neurocomputer according to claim 15, wherein the function generator provides a forcing signal having a carrier frequency and information content modulating the carrier frequency, the oscillators responding to the impression of the forcing signal onto the conductive medium to produce information content modulation substantially the same as that of the conductive medium.

17. An oscillatory neurocomputer according to claim 11, wherein the number n of

oscillating elements is greater than two, a first subset of the oscillating elements communicate at a frequency f_3 of rhythmic forcing input from the source, and at least one second subset of the oscillating elements communicate at least one further frequency f_4 of rhythmic forcing input from the source.

- 5 18. An oscillatory neurocomputer according to claim 15, wherein content varying one

oscillator from its oscillating frequency is communicated to and varies from its oscillating frequency another oscillator in communication with the one oscillator.

19. A neurocomputer including:

- 10 (a) an array of oscillators, at least a plurality of said oscillators having differing frequencies,

- (b) a common conducting medium connected to each of the plurality of

oscillators,

- 15 (c) a source connected to the conducting medium to impart oscillator signals

of various frequencies to the conducting medium, the signals of various frequencies including frequencies effective to bring two or more of the oscillators into communication.

- 20 20. An oscillatory neurocomputer according to claim 19, wherein the oscillators include feedback circuits connected with the medium.

 21. An oscillatory neurocomputer according to claim 20, wherein the oscillators are phase locked loops.

22. A method of enabling communication of a characteristic between a first processing element oscillating at a first frequency and a second processing element oscillating at a second frequency different from the first frequency, the method comprising the steps of:

- 5 operably coupling the first element to a medium;
 operably coupling the second element to said medium;
 operably coupling said medium to a rhythmic input; and
 causing said rhythmic input to oscillate said medium at a third frequency.

- 10 23. The method of claim 22, wherein:
 said third frequency comprises a frequency substantially equal to the difference between the first frequency and the second frequency.

- 15 24. A method of enabling communication of a characteristic between a plurality of n oscillating processing elements comprising the steps of:
 operably coupling each of the plurality of n elements to a corresponding one of a plurality of no more than n connectors;
 operably coupling each one of said connectors to a conductive medium; and
20 operably coupling said medium to a rhythmic input.

- Sub A7 25. In a neurocomputer, a number n of active elements and a medium having connections to the active elements for application of an input signal thereto, said active elements being phase locked loop oscillators.